

LISTING OF CLAIMS

B¹ 1. (currently amended) A neutralizing bispecific fusion protein capable of binding to two sites on a ~~target protein~~gp120, comprising a first binding domain capable of binding to an inducing site on the ~~target protein~~gp120, thereby exposing an induced epitope of gp120; a second binding domain capable of forming a neutralizing complex with ~~an~~the induced epitope of ~~the target protein~~gp120; and a linker connecting the first domain to the second domain, wherein the first binding domain is derived from a CD4 molecule, at least one of the first and the second binding domains ~~domain~~ comprises a binding portion of a variable region of an antibody heavy or light chain.

2. (withdrawn) A protein according to claim 1, wherein the first binding domain comprises a binding portion of a variable region of an antibody heavy or light chain.

3. (withdrawn) A protein according to claim 2, wherein the first binding domain comprises an epitope binding domain of an antibody.

4. (withdrawn) A protein according to claim 3, wherein the first domain comprises a single-chain Fv (SCFv).

5. (withdrawn) A protein according to claim 3, wherein the antibody binding domain mimics a biological activity of a CD4 molecule in binding to the inducing site and exposing the inducing epitope.

6. (withdrawn) A protein according to claim 5, wherein the antibody binding domain is derived from a CD4 anti-idiotypic antibody.

7-10. (canceled)

11. (currently amended) A protein according to claim ~~40~~1, wherein the first binding domain comprises CD4 D1 or CD4D1D2.

12. (original) A protein according to claim 11, wherein the first binding domain is sCD4.
lack of antecedent basis

13. (canceled)

14. (currently amended) A protein according to claim ~~13~~1, wherein the second binding domain comprises a binding domain of an antibody. *Fail to further limit*

15. (original) A protein according to claim 14, wherein the second binding domain comprises a single-chain Fv (SCFv).

16. (original) A protein according to claim 15, wherein the SCFv is selected from the group consisting of SCFv17b, SCFv48d and SCFvCG10.

17. (original) A protein according to claim 14, wherein the antibody binding domain is derived from a neutralizing monoclonal antibody. *LP 112nd*
LP lack of antecedence

18. (original) A protein according to claim 17, wherein the neutralizing monoclonal antibody is selected from the group consisting of 17b, 48d, and CG10.

B1 19. (currently amended) A protein according to claim ~~9~~1, wherein the second binding domain mimics a biological activity of an HIV coreceptor molecule in binding to gp120.

20-22. (canceled)

23. (currently amended) A protein according to claim ~~9~~1, wherein the induced epitope comprises at least one coreceptor binding determinant of gp120.

24. (currently amended) A protein according to claim ~~9~~1, wherein the inducing site is a gp120 CD4 binding site.

25. (original) A protein according to claim 14, wherein the binding domain of the antibody is capable of binding to at least one coreceptor binding determinant of gp120.

26. (original) A protein according to claim 1, wherein the linker maintains the second binding domain in binding proximity to the induced epitope when the first binding domain is bound to the inducing site.

27. (original) A protein according to claim 26, wherein the linker is substantially flexible.

28. (original) A protein according to claim 26, wherein the linker is 15-100 angstroms (Å) long.

29. (original) A protein according to claim 26, wherein the linker is 10-100 amino acid residues in length.

30. (original) A protein according to claim 26, wherein the linker comprises at least one occurrence of an amino acid sequence as represented by SEQ ID NO: 1.

31. (original) A protein according to claim 1, wherein the linker comprises at least one occurrence of an amino acid sequence represented by SEQ ID NO: 1.

32. (original) A protein according to claim 31, wherein the linker comprises an amino acid sequence represented by SEQ ID NO: 2.

33. (currently amended) ~~A- The functional recombinant bispecific fusion protein capable of binding to two sites on gp120, comprising of claim 1, which comprises:~~

- a) sCD4;
- b) SCFv(17b); and
- c) a linker of a length sufficient to maintain the SCFv(17b) in binding proximity to an SCFv(17b) epitope when sCD4 is bound to gp120.

34. (currently amended) A protein according to claim 33, wherein the linker has an amino acid sequence as represented by SEQ ID NO: 22.

35. (original) An isolated nucleic acid molecule encoding a protein according to claim 34.

36. (original) A nucleic acid molecule according to claim 35, wherein the nucleic acid sequence is represented by SEQ ID NO: 3.

37. (original) A protein encoded for by the nucleic acid molecule according to claim 36.

38. (original) An isolated nucleic acid molecule encoding a protein according to claim 1.

39. (original) The nucleic acid molecule according to claim 38, having nucleic acid sequence SEQ ID NO: 4.

40. (original) A transgenic eukaryotic cell comprising the isolated nucleic acid molecule according to claim 38.

41-47. (canceled)

48. (currently amended) A composition comprising the protein according to claim 1, ~~or a variant protein, analog or mimetic thereof.~~

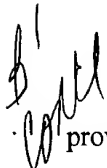
49. (currently amended) A pharmaceutical composition comprising the protein according to claim 1, ~~or a variant protein, analog or mimetic thereof,~~ and a pharmaceutically acceptable carrier.

50-51. (canceled)

52. (original) A kit for treatment and/or prevention of HIV infection, comprising
a clinically effective dose of the neutralizing bispecific fusion protein of claim 1.

53. (original) The kit of claim 52, further comprising instructions.

54. (original) The kit of claim 53, wherein the instructions include directions for
administering at least one dose of the neutralizing bispecific fusion protein to a subject in need of
such treatment.

 55. (original) The kit of claim 52, wherein the neutralizing bispecific fusion protein is
provided in the form of a pharmaceutical composition.
